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TO ALL WHOM IT MAY CONCERN:

10 Be it known that I, Kevin Wince, a citizen of the United States of America, residing
at 201 Rustic Ridge Drive, Kennesaw, Georgia 30144, have invented new and useful
improvements in an

ENCAPSULATED WEIGHT SYSTEM

15 of which the following is a specification.

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ENCAPSULATED WEIGHT SYSTEM

CROSS-REFERENCE TO RELATED APPLICATION

5 This application is a continuation-in-part of copending U.S. utility application entitled "Encapsulated Weight System," having serial no. 10/027,110, filed on December 20, 2001, which is entirely incorporated herein by reference.

TECHNICAL FIELD

10 The present invention is generally related to resistance weight training systems and apparatus and, more particularly, is related to an encapsulated weight system.

BACKGROUND OF THE INVENTION

15 Working out, such as engaging in cardiovascular exercise and resistance weight training, is increasing in popularity and is a common way for people to maintain physical health and well being. Gymnasium facilities and health clubs provide access to various apparatus, such as treadmills, stationary bicycles, and free weight sets, to readily facilitate such exercise. Gym facilities, however, are not always either accessible or desirable to an individual wishing to engage in such exercise activities. Furthermore, gyms often require

20 memberships that can be expensive and limited to particular locations, which can make them less desirable. While one can readily engage in cardiovascular exercise without a gym, through, for example, running, biking, or rowing outdoors, resistance weight training without the use of the apparatus commonly available at a gym, such as free weights, can be more difficult.

25 In particular, proper resistance weight training requires a variety of weighted apparatus, each in a range of weights for training various muscle groups. For example, although a shorter, dumbbell-type weight may be used to train both the biceps, triceps and shoulder muscles, each muscle group may require a different weight for appropriate training. Furthermore, during the same training session, one may desire to train a muscle

30 group requiring a longer barbell-type weight, thereby requiring yet a different

Where one desires to engage in resistance weight training at home, the individual needs to acquire a variety of weight configurations as well as a variety of weight amounts for each configuration, in order to train properly. This can be both expensive as well as space consuming in the home. Traveling also introduces a challenge to consistent weight training. It is often expensive to pay for a one time visit to a gym that typically requires membership, and sometimes is even not allowed by the facility. Furthermore, traveling with a variety of weight configurations as well as the varying weight amounts is difficult and hotel gymnasium facilities are often deficient.

Thus, a heretofore unaddressed need exists in the industry to address the aforementioned deficiencies and inadequacies.

An encapsulated weight system for resistance training comprises a first dumbbell having a center portion with a borehole disposed axially therein. The borehole forms an interior load area defined by a length and a diameter. The first dumbbell further comprises at least a first end cap arranged and configured to releasably engage an end of the center portion, thereby covering the end of the interior load area. At least one weight capsule is provided and substantially corresponds to the diameter of the interior load area and to at least a portion of the length of the interior load area. At least one spacer capsule is provided and substantially corresponds to the diameter of the interior load area and to at least a portion of the length of the interior load area.

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dumbbells are not releasably fixed on opposing ends of the barbell adapter, the system can be configured as a pair of dumbbells.

Other systems, methods, features, and advantages of the present invention will be or become apparent to one with skill in the art upon examination of the following drawings and detailed description. It is intended that all such additional systems, methods, features, and advantages be included within this description, be within the scope of the present invention, and be protected by the accompanying claims.

BRIEF DESCRIPTION OF THE DRAWINGS

Many aspects of the invention can be better understood with reference to the following drawings. The components in the drawings are not necessarily to scale, emphasis instead being placed upon clearly illustrating the principles of the present invention. Moreover, in the drawings, like reference numerals designate corresponding parts throughout the several views.

FIG. 1 illustrates an exploded side perspective view of an encapsulated weight system of the present invention in a barbell configuration.

FIG. 2 illustrates a cut-away side perspective view of an embodiment of a first dumbbell comprising a portion of the encapsulated weight system illustrated in FIG. 1.

FIG. 2A illustrates a cut-away side perspective view of an embodiment of a first dumbbell comprising a portion of the encapsulated weight system illustrated in FIG. 1.

FIG. 3 illustrates a side perspective view of a barbell adapter comprising a portion of the encapsulated weight system illustrated in FIG. 1.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

An embodiment of the encapsulated weight system 10 is illustrated in FIG. 1. The system 10 comprises a first dumbbell 12, a second dumbbell 12', and a barbell adapter 14. The encapsulated weight system 10 can be arranged and configured as a barbell upon fixing portions of the first dumbbell 12 and the second dumbbell 12' to opposing ends of the barbell adapter 14 thereby forming a substantially elongated bar. A free end of the first dumbbell 12 can be capped with a first end cap 16 and the free end of the second

dumbbell 12' can similarly be capped by a first end cap 16'. The components of the encapsulated weight system 10 can comprise any suitable material, such as metal, plastic, hard rubber, or the like. It is preferable, however, that the components themselves are somewhat heavy thereby adding to the effectiveness of the system 10 as a weight training device. The encapsulated weight system 10 can also be arranged and configured to form at least one dumbbell 12 (FIG. 2). The system 10 also comprises a weight capsule 30 and a spacer capsule 32.

FIG. 2 illustrates the first dumbbell 12 in greater detail and the encapsulated weight system 10 as arranged in a dumbbell configuration. Although the first dumbbell 12 will be described herein in detail, it should be understood that the second dumbbell 12' comprises substantially similar features and elements as the first dumbbell 12. The first dumbbell 12 comprises a substantially cylindrical center portion 13 having a borehole disposed substantially axially therein and forming an interior load area 20. The dumbbell 12 optionally comprises a stop 22 disposed toward an end of the center portion 13 and arranged and configured to interrupt the diameter of the interior load area 20. The stop 22 can comprise a ridge or ring extending inwardly in the interior load area 20 thereby decreasing the diameter of the interior load area 20, as illustrated in FIGs. 2 and 2A, a pin 23 extending the diameter of the interior load area 20, a tapering of the diameter of the interior load area 20 or any suitable member or configuration effective to prevent an article substantially corresponding to the diameter of the interior load area 20 from passing beyond the stop 22.

Dumbbell 12 further comprises a first end cap 16 and a second end cap 18 arranged and configured to releasably engage opposing ends of the center portion 13 and cover opposing ends of the interior load area 20. In one configuration, each of the first end cap 16 and the second end cap 18 comprise a threaded member 24 extending therefrom and substantially corresponding to the diameter of the interior load area 20. The interior load area 20 comprises an interior threaded portion 26 toward each of the opposing ends thereof. It is preferred that the threaded member 24 is arranged and configured to engage the threaded portion 26 disposed in the interior load area 20. The

first end cap 16 and the second end cap 18 can also comprise a snap fit member, or any suitable member.

In one configuration, one of the first end cap 16 and the second end cap 18 comprises the stop 22. As an example, where the first end cap 16 comprises the stop 22, the first end cap 16 can be removably or non-removably fixed to the dumbbell 12. Where the first end cap 16 is removably fixed to the dumbbell 12 the first end cap 16 can be optionally marked, such as by color coding, or the like, to indicate to a user that the first end cap 16 is the stop 22.

The dumbbell 12 can comprise a grip 28 disposed around the exterior of the center portion 13. The grip 28 can comprise a wrap of any suitable material, such as rubber or the like, a textured or knurled area formed in the material of the center portion 13 itself (as shown), or any suitable means to assist a user in maintaining a strong, steady hold of the dumbbell 12. It is preferable that the grip 28 includes a substantial area to assist in relieving stress applied to relatively small bones in the palm of a user's hand. It should be noted that the grip 28 also assists a user in maintaining a solid grip of the system 10 as disposed in a barbell configuration.

The encapsulated weight system 10 of the present invention also comprises at least one weight capsule 30 and at least one spacer capsule 32. Both the weight capsule 30 and the spacer capsule 32 preferably substantially correspond to the diameter of the interior load area 20 and can be easily inserted and removed into the interior load area 20 through an opening in the end of the center portion 13 corresponding to the first end cap 16. It is preferable that the encapsulated weight system 10 includes a plurality of weight capsules 30 as well as a plurality of spacer capsules 32. As such, the weight of the center portion 13 can be altered between a range of weights as a function of the number and combination of weight capsules 30 and spacer capsules 32 disposed in the interior load area 20. A user traveling with the system 10 need only travel with the weight capsules 30 and/or spacer capsules 32 needed.

The weight capsules 30 can comprise any suitable weight and can be solid or hollow. Similarly, the spacer capsules 32 can comprise any suitable weight, but are preferably lighter in weight than the weight capsules 30. Spacer capsules 32 can be, for

example, hollow enclosed capsules (FIG. 2), hollow tubes (FIG. 2A) or cubes, or light weight solid members. Furthermore, the capsules 30, 32 can comprise any suitable material, such as, for example, metal, plastic, a combination thereof, or the like. In use, any combination of the weight capsules 30 and spacer capsules 32 can be disposed within the interior load area 20 of the first dumbbell 12 and/or the second dumbbell 12'. In another embodiment the barbell adapter 14 can be arranged and configured to receive weight capsules 30, spacer capsules 32, or any combination thereof.

In a dumbbell configuration, the desired combination of weight capsules 30 and spacer capsules 32 are disposed within the interior load area 20 of the dumbbell 12. The first end cap 16 is disposed on the end of the center portion 13 opposing the stop 22. The capsules 30, 32 are pinned between the optional stop 22 and the threaded portion 24 of the first end cap 16. The second end cap 18 is placed on the center portion 13 to balance the dumbbell 12. Where the stop 22 is not included, the capsules 30, 32 disposed within the interior load area 20 of the dumbbell 12 are pinned between the threaded portion 24 of the first end cap 16 and the threaded portion 24 of the second end cap 18. The second dumbbell 12' can be assembled in a similar manner.

In a barbell configuration, the center portion 13 of the first barbell 12 is removably attached to one end of the barbell adapter 14. The center portion 13 of the second barbell 12' is removably fixed to the opposing end of the barbell adapter 14. The desired combination of weight capsules 30 and spacer capsules 32 are disposed within the interior load area 20 of the center portion 13 of both the first barbell 12 and the second barbell 12'. Where a stop 22 is included in the center portion 13 of the dumbbell 12, 12', it is preferable that the barbell adapter 14 is fixed to the center portion 13 of the first dumbbell 12 and the second dumbbell 12' at the end toward the stop 22. The first end cap 16 is removably fixed to the center portion 13 of the first dumbbell 12 and the center portion 13 of the second dumbbell 12' to balance the barbell. The capsules 30, 32 are slidably pinned between the stop 22 and the threaded member 24 of the first end cap 16 of both the first barbell 12 and the second barbell 12'. Where the stop 22 is not included, the capsules 30, 32 are slidably pinned between the threaded member 34 of the barbell

adapter 14 and the threaded member 24 of the first end cap 16 of each of the first dumbbell 12 and the second dumbbell 12'.

As discussed previously, the first dumbbell 12 and the second dumbbell 12' can be releasably fixed to a barbell adapter 14 (FIG. 3) to form a barbell. The tri-bar design provides for a barbell that consumes relatively little storage space. The barbell adapter 14 comprises a threaded member 34 protruding from opposing ends of the barbell adapter 14. The threaded member 34 is arranged and configured to engage the threaded portion 26 disposed in the interior load area 20 of the first dumbbell 12 and the second dumbbell 12'. The first dumbbell 12 and the second dumbbell 12' can be releasably fixed to the barbell adapter 14 at opposing ends thereof upon engaging the threaded member 34 of the barbell adapter 14 with the threaded portion 26 of the first dumbbell 12 and the second dumbbell 12'. It is preferable that the dumbbell 12 engages the threaded member 34 of the barbell adapter 14 toward the stop 22 disposed in the dumbbell 12. In this configuration, the desired combination of weight capsules 30 and spacer capsules 32 are disposed in the interior load area 20 of the first dumbbell 12 and the second dumbbell 12'.

The combination of capsules 30, 32 in each of the first dumbbell 12 and the second dumbbell 12' is the same, such as to evenly weight the barbell. The optional stop 22 contributes to evenly loading the first dumbbell 12 and the second dumbbell 12' by leading the user to load the capsules 30, 32 into the interior load area 20 of the dumbbells 12, 12' from the same end with respect to attachment of the barbell adapter 14. The barbell adapter 14 can be solid, hollow, or partially hollow and can comprise any suitable material and weight. The barbell adapter 14 can also be arranged and configured to receive a weight capsule 30, a spacer capsule 32 or any combination thereof.

It should be noted that the center portion 13, first end cap 16, second end cap 18, and barbell adapter 14 can alone comprise any desired weight easily alterable with the inclusion of weight capsules 30 and/or a combination of weight capsules 30 and spacer capsules 32 disposed within the interior load area 20 of the dumbbell 12.

It should be emphasized that the above-described embodiments of the present invention, particularly, any "preferred" embodiments, are merely possible examples of implementations, merely set forth for a clear understanding of the principles of the

invention. Many variations and modifications may be made to the above-described embodiment(s) of the invention without departing substantially from the spirit and principles of the invention. All such modifications and variations are intended to be included herein within the scope of this disclosure and the present invention and
5 protected by the following claims.